



10-30-06

1FW

Atty Docket: 204/505 - Applic.: 10/590180

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Ralph J. Koerner

Examiner :
Art Unit :

Serial No.: 10/590180

Filed: 22 August 2006

For: QUILTING METHOD AND
APPARATUS USING
FRAME WITH MOTION
DETECTOR

Commissioner for Patents
Alexandria, VA 22313-1450

PETITION TO MAKE SPECIAL (35 CFR 1.102)

Pursuant to paragraph (c) (1) of 37 CFR 1.102, applicant hereby petitions to make this application special in order to accelerate examination on the ground that the applicant Ralph J. Koerner is over 65 years of age. A supporting declaration of Ralph J. Koerner is attached.

Subsection VIII of MPEP 708.02 lists multiple requirements for the granting of special status. The following comments are keyed to those listed requirements:

(A) This petition is filed pursuant to paragraph (c) of 37 CFR 1.102 and thus, it is believed, no fee is required. If, in fact, a fee is required, it should be charged in accordance with the general Deposit Account Authorization set forth herein.

(B) This application is a US national stage application of PCT/US2005/014375 filed under 35 U.S.C. 371. This application contains 16 claims which are identical to the 16 claims addressed in the International Search Report and Written Opinion (ISR/WO) (copy enclosed) in PCT/US2005/014375. All of the claims are directed to a single invention. If the Office determines that the claims are directed to plural inventions, applicant agrees to make an election without traverse.

1 (C) The most recently performed pre-examination search is represented
2 by the aforementioned ISR/WO (copy enclosed) in PCT/US2005/014375.

3 (D) Copies of all patents and publications cited in the aforementioned
4 ISR/WO are enclosed.

5 (E) This application has been filed under 35 U.S.C. 371 based on
6 international application PCT/US2005/014375 having an international filing date of 26
7 April 2005 and a priority date of 14 May 2004. This application is also a continuation-
8 in-part of U.S. Application 10/776,355 filed on 11 February 2004 (now U.S. Patent
9 6,883,446 issued 26 April 2005) which claims priority based on U.S. Provisional
10 Application 60/447,159 filed 12 February 2003.

11 This CIP application incorporates said parent application 10/776,355 in its
12 entirety (specification page 7, line 10). Application 10/776,355 discloses an apparatus
13 which permits a user to perform "free motion" stitching by enabling him/her to freely
14 manually guide a stack of fabric layers across a planar bed beneath an actuatable
15 fixedly located stitch head. The apparatus includes a detector which detects stack
16 movement and controls stitch head actuation to deliver stitches synchronized to the
17 stack movement to thus produce uniform length stitches. Said parent application
18 primarily contemplates that the user directly grasp the stacked layers to push and/or
19 pull the stack across the planar bed. However, the application also recognizes that the
20 user could mount the stack on a frame and then grasp the frame to move the stack
21 across the bed. The preferred detector described in said parent application responds
22 to energy, e.g., light, reflected from a surface of the stack to provide output pulses
23 representative of stack movement.

24 The new matter introduced into this CIP application is primarily depicted in
25 Figures 9-13 and is directed to alternative implementations for controlling stitch head
26 actuation and permitting free motion stitching. More particularly, the embodiments
27 introduced in this application include a frame for mounting the fabric stack. The frame
28

1 is supported for user guided movement beneath the fixedly located stitch head and a
2 detector is provided to produce signals representing the magnitude of frame
3 translation, and thus the magnitude of stack translation.

4 Embodiments of the inventions described in said parent application 10/776,355
5 and in this CIP application allow the user to operate in a "free motion" mode enabling
6 him/her to freely manually move the stack without interference by any feed mechanism,
7 or feed dogs, to produce uniform length stitches. The claims in this CIP application are
8 similar to the allowed claims in said parent application 10/776,355 (now US Patent
9 6,883,446) except that the independent claims herein (i.e. 1,8,10,11,12) are limited to
10 the use of a frame for retaining a fabric layer stack and a detector for detecting frame
11 movement.

12 The aforementioned ISO/WO asserts that claims 1-4 and 8-16 "lack an inventive
13 step" "as being obvious over Duval (U.S. Patent 6,959,657 B1) in view of Schweitzer
14 (U.S. Patent 6,994,042 B2). The ISR/WO observes that

15 DUVAL discloses an apparatus (20, 10) for inserting stitches of uniform length through a stack
16 (12) of one or more fabric layers comprising a fixed located stitch head (Fig. 6) including a
17 needle (22) mounted for cyclic vertical movement. DUVAL discloses a bed (Fig. 1) defining a
18 substantially horizontal oriented first planar surface mounted opposite to said stitch head.
19 DUVAL discloses a detector (30) for producing one or more signals representing the
20 magnitude of translational movement of the stack (Detailed Description, Part C). DUVAL
21 discloses control means (40) responsive to said detector signals indicating a magnitude of
22 translational movement exceeding a threshold magnitude for causing said needle to execute a
23 cyclic movement from an up position remote from said stack, to a down position piercing said
24 stack, and back to said up position (Detailed Description, Parts D & F).

25
26 Applicant's parent application 10/776,355 (now US Patent 6,883,446), which is
27 entitled to a 12 February 2003 priority date, discloses all the aforementioned features
28 of the cited Duval patent whose filing date is 10 March 2004. Inasmuch as this CIP

1 application is entitled to priority based on said parent application 10/776,355, it is
2 respectfully submitted that Duval does not constitute prior art with respect to the subject
3 matter common to said parent application and this CIP application.

4 The ISR/WO recognizes that "DUVAL fails to disclose a frame configured to
5 retain a fabric layer stack in a substantially taut condition ... for manually guided
6 movement ..." but suggests that it "would have been obvious ... to have provided the
7 apparatus of DUVAL with a frame configured to retain a fabric layer ... in light of ...
8 SCHWEIZER". It is urged that this conclusion is inconsistent with the Duval and
9 Schweizer teachings and, in any event, would not anticipate applicant's claimed
10 invention.

11 That is, applicant's invention relates to a method and apparatus allowing a user
12 to engage in free motion stitching, i.e., where the user is able to freely translate and/or
13 rotate a stack of fabric layers on a planar bed beneath a fixedly located actuatable
14 stitch head. Free motion stitching requires the stack to be disengaged from any
15 machine feed mechanism, or "feed dogs", to allow the user to freely move the stack on
16 the planar bed. Applicant's invention is directed to achieving uniform stitches in this
17 free motion environment where stack movement is solely attributable to user guided
18 manual movement.

19 In contrast to applicant's embodiments which allow a user to produce uniform
20 stitches while freely moving the stack, Schweizer (in parent 6,871,606 and continuation
21 6,994,042) teaches a system for automatically controlling a feed mechanism to achieve
22 uniform stitch length. That is, Schweizer detects fabric movement and uses the
23 detected information to compare actual feed increments with target feed increments.
24 This enables the Schweizer system to adjust the rate at which his material transport
25 device 27, including material feeders 29, moves the fabric. Thus, whereas Schweizer
26 teaches a system for automatically controlling a material feed mechanism, applicant
27 teaches a system permitting free manually guided stack movement and control of the
28 stitch head synchronized to such movement.

1 All of applicant's independent claims 1, 8, 10, 11, and 12 are limited to manually
2 guided movement of the stack and thus are readily distinguishable over the traditional
3 use of a feed mechanism as discussed in Schweizer.

4 The additional references cited in the ISR/WO as Category A references have
5 been considered. None of these references suggest applicant's claimed invention for
6 enabling a user to produce uniform stitches while allowing the user to freely manually
7 guide the fabric stack on a planar bed beneath a fixedly located actuatable stitch head.

8 It is thus urged that claims 1-16 are allowable.

9 Favorable and prompt consideration of this Petition To Make Special is
10 courteously requested.

11 Respectfully submitted,

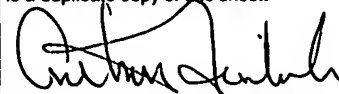
12 

13 ARTHUR FREILICH
14 Reg. No. 19, 281

15 FREILICH, HORNBAKER & ROSEN
16 9045 Corbin Avenue Suite 260
17 Northridge, CA 91324-3343
18 TEL. 818-678-6408 • FAX 818-678-6411

19
20
21
22 **DEPOSIT ACCOUNT AUTHORIZATION:**

23 Throughout the prosecution of this application the Patent and Trademark
24 Office is authorized to charge any additional fees which may be
25 required, or credit any overpayment to Account No. 501232. Enclosed
26 is a duplicate copy of this sheet.

27 

28 ARTHUR FREILICH, Reg. No. 19,281

CERTIFICATION OF MAILING:

I hereby certify that this correspondence is being deposited with the
United States Postal Service with sufficient postage as first class mail in
an envelope addressed to: Mail Stop Petitions, Commissioner for
Patents, P.O. Box 1450 Alexandria, VA 22313-1450, on October
27, 2006.



ARTHUR FREILICH



Atty Docket:204/505 Applic.: 10/590180

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In Re Application of :
Ralph J. Koerner

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For: QUILTING METHOD AND
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FRAME WITH MOTION
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Commissioner for Patents
Alexandria, VA 22313-1450

SUPPORTING DECLARATION OF RALPH KOERNER

Ralph J. Koerner declares:

1- I am the named applicant in the subject application and am submitting this
declaration in support of my Petition To Make Special;

2- I am over 65 years of age; and

3- The attached photocopy of my passport correctly shows my birthday as 19
September 1929.

I hereby declare that all statements made herein of my own knowledge are true and that all
statements made on information and belief are believed to be true; and further that these
statements were made with the knowledge that willful false statements and the like so made are
punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false
statements may jeopardize the validity of the application or any patent issued thereon.

Dated

10/21/06

Ralph J. Koerner
RALPH J. KOERNER

*Le Secrétaire d'Etat
des Etats-Unis d'Amérique
prie par les présentes toutes autorités compétentes de laisser passer
le citoyen ou ressortissant des Etats-Unis titulaire du présent passeport
sans délai ni difficulté et, en cas de besoin, de lui accorder
toute aide et protection légitimes.*

NOT VALID UNTIL SIGNED

[illegible]

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| | | |
|--|--|---|
| Applicant's or agent's file reference 204/505 PCT | FOR FURTHER ACTION <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small> | |
| International application No. PCT/US05/14375 | International filing date (day/month/year) 26 April 2005 (26.04.2005) | (Earliest) Priority Date (day/month/year) 14 May 2004 (14.05.2004) |
| Applicant RALPH KOFNER | | |

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of _____ sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

a. With regard to the language, the international search was carried out on the basis of



the international application in the language in which it was filed.



a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐

With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II)

3. ☐ Unity of invention is lacking (See Box No. III)

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 10



as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.



as selected by this Authority, because this figure better characterizes the invention.

b. ☐

none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/14375

Box IV TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

A frame (40, 300) is provided for mounting a fabric layer stack (12, 22) and retaining it in a substantially taut condition. The frame (40, 300) is supported for manually guided movement beneath a fixedly located stitch head (15, 28, 312) and a detector (16, 64, 266) is provided to produce signals representing the magnitude of frame translation, and thus the magnitude of stack translation. The detector (16, 64, 330) signals are applied to control circuitry (18, 65, 268) to actuate the stitch head (15, 28, 312) at a rate related to stack translation speed. The frame (40, 300) is supported by bearings (308), e.g., wheels, slides, etc., which permit the frame (40, 300) to be freely manually guided across a frame supporting surface beneath the stitch head (15, 28, 312).

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/14375

A. CLASSIFICATION OF SUBJECT MATTER

IPC: D05B 1/00(2006.01)

USPC: 112/475.02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : Please See Continuation Sheet

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| A | US 4,658,741 A (JEHLE et al) 21 April 1987 (21.04.1987), entire disclosure | 1, 8 and 10-12 |
| A | US 5,529,004 A (PORTER et al.) 25 June 1996 (25.06.1996), entire disclosure | 1, 8 and 10-12 |
| A | US 5,664,508 A (MULCAHEY et al) 09 September 1997 (09.09.1997), entire disclosure | 1, 8 and 10-12 |
| A | US 6,450,110 B1 (BRUTH et al) 17 September 2002 (17.09.2002), entire disclosure | 1, 8 and 10-12 |
| A | US 6,470,813 B2 (BATA et al) 29 October 2002 (2.10.2002), entire disclosure | 1-4 and 7-16 |
| A | US 6,718,893 B1 (KONG, BYOUNG) 13 April 2004 (13.04.2004), entire disclosure | 1, 8 and 10-12 |
| Y | US 6,871,606 B2 (SCHWEITZER, MANFRED) 29 March 2005 (29.03.2005), entire disclosure | 1-4 and 7-16 |



Further documents are listed in the continuation of Box C.



See patent family annex.

| Special categories of cited documents | |
|---|--|
| "A" document defining the general state of the art which is not considered to be of particular relevance | "T" later document published after the international filing date or priority date and not in conflict with the application but used to understand the principle or theory underlying the invention |
| "B" earlier application or patent published on or after the international filing date | "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone |
| "C" document which may throw doubts on priority claim(s) or which is used to establish the publishing date of another citation or other special reason (as specified) | "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "O" document referring to an oral disclosure, use, exhibition or other means | |
| "P" document published prior to the international filing date but later than the priority date claimed | "A" document member of the same patent family |

Date of the actual completion of the international search

06 October 2006 (06.10.2006)

Date of mailing of the international search report

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Authorized officer

Gary L. Welch

Telephone No. (571) 273-8300

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/14375

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| A | US 6,883,446 B2 (KOERNER, RALPH) 26 April 2005 (26.04.2005), entire disclosure | 1-4 and 7-16 |
| Y | US 6,959,657 B1 (DUVAL, RICHARD) 01 November 2005 (01.11.2005), entire disclosure | 1-4 and 7-16 |
| Y | US 6,994,042 B2 (SCHWEIZER, MANFRED) 07 February 2006 (07.02.2006), entire disclosure | 1-4 and 7-16 |
| A | US 2005-0145149 A1 (HOOKE, DAVID) 07 July 2005 (07.07.2005), entire disclosure | 1-4 and 7-16 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/14375

Continuation of B. FIELDS SEARCHED Item 1:

112/102.5, 103, 117, 118, 119, 271, 272, 274, 275, 277, 306, 308, 311, 315, 470.03, 470.14, 475.02, 475.04
700/130, 136

Continuation of B. FIELDS SEARCHED Item 3:

EAST

search terms: quilting, control, frame, hold, move, movable, moving, stitch, regulate, regulating, speed, velocity, acceleration, motion,
sensor, detector, accelerometer, sew, embroider, quilt, position

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
ARTHUR FREILICH
FREILICH, HORNBAKER & ROSEN
9045 CORBIN AVENUE, SUITE 260
NORTHRIDGE, CA 91324

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

| | |
|--|--|
| Applicant's or agent's file reference 204/505 PCT | Date of mailing (day/month/year) |
| International application No. PCT/US03/14375 | International filing date (day/month/year) 26 April 2005 (26.04.2005) |
| Applicant RALPH KOTNER | |

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 338.82.70.

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

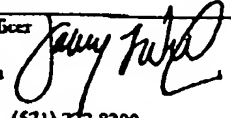
Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the PCT Applicant's Guide, Volume II, National Chapters and the WIPO Internet site.

| | |
|---|--|
| Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201 | Authorized officer Gary I. Wehli  Telephone No. (571) 272-8300 |
|---|--|

Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
ARTHUR FREILICH
FREILICH, HORNBAKER & ROSEN
9045 CORBIN AVENUE, SUITE 260
NORTHRIDGE, CA 91324

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

| | | |
|---|---|---|
| Applicant's or agent's file reference 204/S05 PCT | | Date of mailing (day/month/year) |
| International application No. PCT/US05/14375 | | FOR FURTHER ACTION See paragraph 2 below |
| International filing date (day/month/year) 26 April 2005 (26.04.2005) | Priority date (day/month/year) 14 May 2004 (14.05.2004) | |
| International Patent Classification (IPC) or both national classification and IPC IPC: D05B 1/00 (2006.01) USPC: 112/475.02 | | |
| Applicant RALPH KOERNER | | |

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA, a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

| | | |
|---|---|--|
| Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201 | Date of completion of this opinion 06 October 2006 (06.10.2006) | Authorized officer Gary L Welch Telephone No. (571) 272-8300 |
|---|---|--|

Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US05/14375

Box No. 1 Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in electronic form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/14375

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 1-16 YES

Claims none NO

Inventive step (IS)

Claims 5-7 YES

Claims 1-4 and 8-16 NO

Industrial applicability (IA)

Claims 1-16 YES

Claims NONE NO

2. Citations and explanations:

Please See Continuation Sheet

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/14375

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1-4 and 8-16 lack an inventive step under PCT Article 33(3) as being obvious over DUVAL (U.S. Patent 6,959,657 B1) in view of SCHWEIZER (U.S. Patent 6,994,042 B2).

Regarding claim 1, DUVAL discloses an apparatus (20, 10) for inserting stitches of uniform length through a stack (12) of one or more fabric layers comprising a fixed located stitch head (Fig. 6) including a needle (22) mounted for cyclic vertical movement. DUVAL discloses a bed (Fig. 1) defining a substantially horizontal oriented first planar surface mounted opposite to said stitch head. DUVAL discloses a detector (30) for producing one or more signals representing the magnitude of translational movement of the stack (Detailed Description, Part C). DUVAL discloses control means (40) responsive to said detector signals indicating a magnitude of translational movement exceeding a threshold magnitude for causing said needle to execute a cyclic movement from an up position remote from said stack, to a down position piercing said stack, and back to said up position (Detailed Description, Parts D & E).

However, DUVAL fails to disclose a frame configured to retain a fabric layer stack in a substantially taut condition adjacent to said first planar surface and means supporting said frame for manually guided movement to move said stack across said first planar surface. SCHWEIZER teaches an apparatus for inserting stitches of uniform length through a stack of one or more fabric layers in which a detector (32) for producing a signal representing the magnitude of translational movement of a frame (37) (Abstract). SCHWEIZER teaches a frame (37) configured to retain a fabric layer in a substantially taut condition adjacent to said first planar surface in order to hold a layer of fabric in a more secure manner (Fig. 6). SCHWEIZER teaches means (43, 45) supporting the frame for guided movement to move the stack across the first planar surface (Fig. 6). It is inherent in the structure as shown in the art that the guided movement is manual guided movement because the user is almost always involved with the entire process. For example the user can pull and/or push the frame or the user can manually inputting commands (i.e. knob) for the movement of the frame in order to move the fabric easier during the sewing process. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the apparatus of DUVAL with a frame configured to retain a fabric layer with means for guided movement, in light of the teachings of SCHWEIZER, in order to hold a fabric layer in a more secure manner while also providing an easier way of moving the fabric during the sewing process.

Regarding claims 2-4, DUVAL in view of SCHWEIZER teaches the apparatus as discussed above. However, DUVAL in view of SCHWEIZER fails to teach the means supporting said frame including bearings that engage with a second planar surface. SCHWEIZER does teach a frame having means (SCHWEIZER; 43, 45) supporting the frame for movement purposes that involve slide members but fails to mention bearings. It is common in the art for a moving structure, such as an embroidery frame, to have bearings in combination

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Supplemental Box

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with a slide member in order to allow less resistance when the structure is moved into different positions. Bearings can further be considered wheels because bearings are circular structures that revolve about an axis. Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to have provided the apparatus of DUVAL in view of SCHWEIZER with bearings in order to allow less resistance when the frame is moved to different positions.

The method of claim 8 also lacks an inventive step for the reasons as discussed above. The method claims are inherent in view of the apparatus claims.

Regarding claims 9-12, DUVAL discloses a structural element and method step in which there are control means that cause the needle to execute cyclic movements at a rate proportional to the speed of movement and translational movement of the fabric (Detailed Description, Parts D & E). In order to accomplish this task, DUVAL discloses means for coupling signals to a drive system that synchronizes the cycle rate of the needle to the translational movement of the fabric (Detailed Description, Parts D & F). It would have been obvious over DUVAL in view of SCHWEIZER to combine a frame with the structure of DUVAL as discussed above. From this combination the fabric is securely attached to the frame, therefore the fabric and frame will have the same speed of movement. The remaining steps and structure as disclosed in the applicant's claims 10 and 11 lack inventive steps as discussed above.

Claim 13 lacks an inventive step for the same reasons as shown in the discussion of claims 2-4 above.

Regarding claim 14, DUVAL in view of SCHWEIZER teaches the detector means producing signals representing the magnitude of frame translation along first and second perpendicular directions (DUVAL; Col. 4, Lines 11-14).

Regarding claim 15, DUVAL in view of SCHWEIZER teaches the means for coupling being adapted to apply signals to the drive subsystem to initiate a needle cycle in response to frame translation exceeding a threshold magnitude (DUVAL; Detailed Description, Parts D & F).

Regarding claim 16, DUVAL in view of SCHWEIZER teaches the drive subsystem including speed control circuitry wherein the means for coupling is adapted to apply the signals to the speed control circuitry (DUVAL; Detailed Description, Parts D & F).

Claims 5-7 meets the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a detector coupled to the frame in which detector comprises an optical sensor responsive to light reflected from a second planar surface. The prior art also fails to teach or suggest at least one arm linked to the frame with means responsive to movement of the arm for producing the signals in combination with the present claim.

Claims 1-16 meets the criteria set out in PCT Article 33(4), and thus meets industrial applicability because the subject matter claimed can be made or used in industry.